

In the United States Court of Federal Claims

No. 16-932
(Filed: 26 July 2022)

SPECTRE CORPORATION, *
*
Plaintiff, *
*
v. * Evidence; Admissibility of Layperson
* Testimony; Admissibility of Expert
* Testimony; Hearsay; Fed. R. Evid. 701;
THE UNITED STATES, * Fed. R. Evid. 702; Fed. R. Evid. 802.
*
Defendant. *

James W. Wiggin III, of Columbus, OH, for plaintiff.

Andrew J. Hunter, Trial Attorney, Commercial Litigation Branch, Civil Division, of the U.S. Department of Justice, with whom were *Brian M. Boynton*, Acting Assistant Attorney General, and *Patricia M. McCarthy*, Director, all of Washington, DC, for defendant.

OPINION AND ORDER

HOLTE, Judge.

Plaintiff Spectre Corporation manufactures and sells pressure sensors to be used in various industries, including automotive, oil and gas, aviation, and aerospace. Spectre executed two contracts with NASA to license and commercialize NASA's patented silicon carbide pressure sensor technology. Plaintiff alleges NASA breached both contracts and implied covenants of good faith and fair dealing, for which plaintiff seeks compensatory damages and lost profits. After a period of discovery, the government filed a motion for partial summary judgment and three motions in limine to exclude certain witness testimony, including: (1) a motion to exclude a packaging cost estimate prepared by Spectre's employee Mr. Jeffrey Votypka; (2) a motion to exclude testimony about sales projections provided by Spectre's CEO Mr. Jack Keller and salesman Mr. Nicholas Carollo; and (3) a motion to exclude materials prepared by Dr. Chris Melkonian, plaintiff's former expert, and portions of Dr. Leland Spangler's testimony relying on Dr. Melkonian's materials. Plaintiff responded with a motion in limine to exclude testimony and evidence provided by the government's expert Dr. Aaron Knobloch. The Court stayed consideration of the government's motion for partial summary judgment pending resolution of the parties' motions in limine. For the following reasons, the government's motion in limine to exclude Mr. Votypka's packaging cost estimate and the government's motion in limine to exclude materials prepared by Dr. Melkonian and portions of Dr. Spangler's testimony relying on Dr. Melkonian's materials are granted. The government's motion in limine to exclude portions of Mr. Keller's and Mr. Carollo's testimony is granted-in-

part and denied-in-part. Plaintiff's motion in limine to exclude portions of Dr. Knobloch's testimony is denied.

I. Procedural and Factual Background

Plaintiff Spectre Corporation ("Spectre") and the United States through the National Aeronautics and Space Administration ("NASA") executed two agreements to commercialize pressure sensor technology NASA developed and patented. The first agreement, SAA3-210 ("Space Act Agreement") executed on 22 December 2011, sets forth NASA's and Spectre's obligations to commercialize NASA's silicon-carbide sensor technology. *See* Compl. Ex. 3 at 5–21 (Space Act Agreement), ECF No. 1-3. The second agreement, DE-456 ("Exclusive License Agreement") executed on 14 May 2012, granted Spectre a royalty-bearing, exclusive license to practice the silicon-carbide sensor patents through 25 January 2025, the end of the patents' terms, and required Spectre to pay a \$50,000 fee to NASA. *See* Compl. Ex. 1 at 1–17 (Exclusive License Agreement), ECF No. 1-1; Compl. Ex. 2 at 1–14 (Exclusive License Agreement), ECF No. 1-2; Compl. Ex. 3 at 1–3 (Exclusive License Agreement), ECF No. 1-3. Around the same time, Spectre applied for and received a \$1,000,000 grant from the State of Ohio to commercialize the sensor technology. *See* Compl. Ex. 3 at 23–84 (Ohio Grant), ECF No. 1-3.

After delays and conflicts affecting the performance of obligations under the contracts, NASA terminated the Exclusive Licensing Agreement and halted its performance under the Space Act Agreement, allowing the Space Act Agreement to expire by its own terms. Compl. at 4, ECF No. 1. Plaintiff brought this action for breach of the Space Act Agreement and the Exclusive Licensing Agreement claiming \$215,000 for fees paid to NASA, at least \$2,000,000 for money spent on the failed project, and more than \$45,000,000 in lost profits. *See* Compl.

To support its claims for lost profits, plaintiff submitted a lost profits model which purports to estimate the profits Spectre would have enjoyed if NASA had fully performed its contractual obligations. *See* Def.'s Mot. Exclude Keller & Carollo App. at Appx1–11 (Pl.'s Second Interrogs. Answers), ECF No. 114-1. The lost profits model comprises thirteen sheets, including a summary, projected gross sales, net lost profits, actual financial performance, projected lost profits by year, a costing matrix, and extended pricing predictions. *Id.* at Appx4–7 (Pl.'s Second Interrogs. Answers). None of these pages were submitted with the parties' briefing, but the government submitted a summary of the sales projections and a net profit comparison. *Id.* at Appx129 (Spectre SiC Sales Projections), Appx130 (Net Profit Comparison). The lost profits calculations rely in part on three sources: (1) cost information provided by Spectre's engineer and project manager Mr. Votypka, (2) cost information provided by plaintiff's expert Dr. Spangler, and (3) sales projections provided by Spectre's CEO Mr. Keller and salesman Mr. Carollo.

A. Dr. Spangler's Fabrication Cost Estimate

Plaintiff's initial expert discovery disclosure identified Dr. Melkonian as an expert witness and stated he would offer testimony about the estimated commercial cost to fabricate silicon carbide pressure sensors, among other things. Pl.'s Initial Disc. Disclosure at 13, ECF No. 126-3. Dr. Melkonian, however, withdrew after plaintiff filed its initial discovery disclosure

due to an unanticipated conflict of interest, leaving plaintiff with an incomplete fabrication cost estimate and no expert witness to testify. Joint Status Report at 2, ECF No. 97. Plaintiff quickly located a new expert, Dr. Spangler, but—not wanting to duplicate costs—asked Dr. Spangler to review Dr. Melkonian’s work on the fabrication cost estimate and endorse it as his own if appropriate. Joint Status Report at 2; 25 Mar. 2022 Oral Arg. Tr. (“Tr.”) at 157:11–25, ECF No. 132. Dr. Spangler reviewed Dr. Melkonian’s partial cost estimate, made some changes, and endorsed it. *See* Def.’s Mot. Exclude Spangler App. at Appx2–4 (Spangler Report), ECF No. 113-1.

B. Mr. Votypka’s Packaging Cost Estimate

Dr. Spangler’s cost estimate was limited to the cost to fabricate the silicon carbide die, or internal components of the silicon carbide pressure sensor. These internal components must be packaged in a housing using NASA’s patented process to ensure they function reliably. Compl. at 21. Plaintiff’s project manager and engineer Mr. Votypka prepared an estimate of the labor and materials necessary to calculate the cost of carrying out the packaging process as he understood it. *See* Def.’s Mot. Exclude Votypka at Appx78 (Spectre SiC Costing), ECF No. 112-1. Together, Mr. Votypka’s packaging cost estimate and Dr. Spangler’s fabrication cost estimate comprise the total cost to manufacture the silicon carbide pressure sensors.

C. Mr. Keller’s and Mr. Carollo’s Sales Projections

Mr. Keller’s and Mr. Carollo’s sales projections purport to estimate sales over a five-year period based on “representative sales”—*i.e.*, sales plaintiff believes would have been typical for a given customer if Spectre had been able to manufacture silicon carbide pressure sensors. Def.’s Mot. Exclude Keller & Carollo App. at Appx7–8 (Pl.’s Second Interrogs. Answers). Mr. Keller and Mr. Carollo identify several potential customers they believe would have purchased the silicon carbide pressure sensors based on their understanding of customers’ technical requirements and conversations with some customers. *Id.*

On 30 July 2021, the government filed three motions in limine to exclude information provided by these witnesses and a motion for partial summary judgment on the issue of lost profits. *See* Def.’s Mot. Exclude Votypka, ECF No. 112; Def.’s Mot. Exclude Spangler, ECF No. 113; Def.’s Mot. Exclude Keller & Carollo, ECF No. 114; Def.’s Mot. for Partial Summ. J., ECF No. 115. Plaintiff responded with a motion in limine to exclude information provided by the government’s expert Dr. Aaron Knobloch. *See* Pl.’s Mot. Exclude Votypka Resp. & Cross-Mot. Exclude Knobloch, ECF No. 120. The Court stayed consideration of the government’s partial motion for summary judgment pending a status conference to discuss a schedule to consider the parties’ motions. Order at 1, ECF No. 117. During the status conference, the parties agreed briefing and consideration of the government’s motion for partial summary judgment should remain stayed pending resolution of the parties’ motions in limine. Order at 1, ECF No. 118. On 25 March 2022, with briefing complete, the Court held oral argument on the parties’ motions in limine. Order at 1, ECF No. 130.

II. Parties’ Arguments

A. Government’s Motion to Exclude Spectre’s Lost Profits Model and Portions of Testimony Prepared by Spectre’s Project Manager Jeffrey Votypka

Mr. Votypka prepared an estimate of the cost to package silicon carbide pressure sensors. *See* Def.’s Mot. Exclude Votypka’s App. at Appx78 (Spectre SiC Costing). The packaging cost estimate includes labor, materials, and other expenses necessary to carry out the process as Mr. Votypka understands it. *Id.* The cost to package silicon carbide pressure sensors contributes to the overall cost to produce the pressure sensors; plaintiff subtracts this cost from its projected revenue to determine its lost profits. *Id.* at Appx6–7 (Pl.’s Second Interrogs. Answers).

The government argues portions of Mr. Votypka’s testimony and his packaging cost estimate should be excluded under Rule 701(c) of the Federal Rules of Evidence (“FRE”) as “Spectre’s cost estimate for the packaging of the silicon carbide sensor is highly dependent on scientific and technical knowledge.” *See* Def.’s Mot. Exclude Votypka at 3. Plaintiff responds arguing NASA breached its contractual obligation to provide Spectre with sufficient technical information to manufacture the packaging; absent this information, plaintiff argues it was unable to provide a more accurate packaging cost estimate. Pl.’s Mot. Exclude Votypka Resp. & Cross-Mot. Exclude Knobloch at 6–7. Plaintiff attempted to obtain the necessary technical information from the government and from the government’s third-party contractor but was “met with fierce opposition.” *Id.* at 6 n.3.

B. Government’s Motion to Exclude Materials Prepared by Spectre’s Former Expert Dr. Melkonian and Portions of Testimony Relying on Dr. Melkonian’s Materials Provided by Spectre’s Current Expert Dr. Spangler

Dr. Spangler prepared an estimate of the materials and labor needed to fabricate silicon carbide pressure sensor dies, the semiconductor component of the pressure sensor. *See* Def.’s Mot. Exclude Spangler App. at Appx2–4 (Spangler Report). Dr. Spangler used an incomplete estimate prepared by plaintiff’s former expert Dr. Melkonian as a starting point for his analysis. *Id.* Plaintiff relied on Dr. Spangler’s final estimate for its lost profits calculations. Like Mr. Votypka’s packaging cost estimate, Dr. Spangler’s cost estimate for fabricating silicon carbide pressure sensor dies contributes to the overall cost to produce the pressure sensors; plaintiff also subtracts this cost from its projected revenue to determine its lost profits. *See* Def.’s Mot. Exclude Votypka’s App. Appx6–7 (Pl.’s Second Interrogs. Answers).

The government seeks to exclude Dr. Spangler’s testimony because it relies on Dr. Melkonian’s analysis, which the government believes must be excluded under Rule 37 of the Rules of the Court of Federal Claims (“RCFC”) because he did not provide a written report as required by RCFC 26(a)(2)(B) and because he is not available for deposition as required by RCFC 26(b)(4)(A). Def.’s Mot. Exclude Spangler at 6, 8. According to the government, as Dr. Spangler did not perform any independent cost calculation, *id.* at 12, Dr. Spangler’s analysis of silicon carbide costs must also be excluded because it is entirely reliant upon inadmissible expert testimony, *id.* at 11. Plaintiff responds explaining when Dr. Melkonian withdrew from the case, plaintiff had “been left in the lurch” and “scrambled to find a replacement.” Pl.’s Mot. Exclude Spangler Resp. at 3, ECF No. 121. “Not wanting to double Spectre’s expert cost,” plaintiff explains, “the Spectre team asked Dr. Chip Spangler whether he would be able to review Dr.

Melkonian’s work and—if appropriate and consistent with his standards—adopt and endorse it.” *Id.* (citing Spangler Decl. at 1–2, ECF No. 121-1).

C. Government’s Motion to Exclude Portions of Spectre’s Lost Profits Model and Testimony Provided by Spectre’s CEO Mr. Keller and Salesman Mr. Carollo

As part of plaintiff’s lost profits model, Spectre’s CEO Mr. Keller and salesman Mr. Carollo, prepared sales projections based on their knowledge of the pressure sensor market and interactions with potential customers. According to the government, those sales projections are inadmissible under FRE 701(a) because sales projections “are not a fact witness’s account of something that was actually perceived but rather an opinion as to what the witness believes is likely to occur in the future.” Def.’s Mot. Exclude Keller & Carollo at 7–9. The government also argues the testimony is based on scientific, technical, or specialized knowledge within the scope of FRE 702, making it inadmissible under FRE 701(c). *Id.* (citing FRE 701(c)). Spectre responds by arguing it was “wounded” by the government’s alleged breach and could not afford “expensive experts.” Pl.’s Mot. Exclude Keller & Carollo Resp. at 2, ECF No. 119. Spectre believes its employees’ testimony should be allowed because they “have spent their lives in the pressure sensor market.” *Id.* at 4.

D. Plaintiff’s Cross-Motion to Exclude Portions of Testimony Given by the Government’s Expert Dr. Knobloch About Spectre’s Packaging Cost Estimate

The government’s expert Dr. Knobloch explains plaintiff’s packaging cost estimate is flawed because it incorrectly assumes nickel be used as a fill material to braze the aluminum nitride header for the pressure sensors to its supporting metal. Pl.’s Mot. Exclude Votypka Resp. & Cross-Mot. Exclude Knobloch at 2. Plaintiff urges the Court to exclude this portion of Dr. Knobloch’s expert testimony, arguing it “does not ‘help the trier of fact to understand the evidence or to determine a fact in issue’ as required by [FRE] 702(a).” *Id.* The government responds by referring to the adversarial nature of litigation to argue: “Parties are not required to provide evidence for their opponent’s claims. Rather, a party bears the burden of proof for its own claims.” Def.’s Mot. Exclude Votypka Reply at 7, ECF No. 126. Besides, the government argues, Dr. Knobloch’s testimony helps the Court as the reliability of Mr. Votypka’s packaging cost calculation “is a ‘fact in issue’ in these proceedings, as well as any further summary judgment or trial proceedings.” *Id.* at 8 (quoting FRE 702(a)).

III. Legal Standard

FRE 701 states “[i]f a witness is not testifying as an expert, testimony in the form of an opinion is limited to one that is: (a) rationally based on the witness’s perception; (b) helpful to clearly understanding the witness’s testimony or to determining a fact in issue; and (c) not based on scientific, technical, or other specialized knowledge within the scope of Rule 702.” FRE 701. A “party offering [FRE 701 lay witness opinion] testimony must show that the witness had an adequate opportunity to observe and presently recalls the observation, and a person who has no knowledge of a fact except what another has told him does not satisfy the requirement of knowledge from observation.” *BPLW Architects & Eng’rs, Inc. v. United States*, 106 Fed. Cl. 521, 545 (2012) (cleaned up). FRE 701, “which allows a lay witness to testify in opinion form,

requires the testimony to be ‘rationally based on the witness’s perception.’” *Id.* (quoting FRE 701(a)). This requirement “effectively incorporates the personal knowledge requirement as a prerequisite to acceptance of opinions by lay persons.” *DataMill, Inc. v. United States*, 91 Fed. Cl. 722, 734–35 (2010). FRE 701(c) prohibits lay testimony from being “based on scientific, technical, or other specialized knowledge within the scope of Rule 702.” FRE 701(c).

FRE 702 in turn states, “[a] witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if: (a) the expert’s scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue; (b) the testimony is based on sufficient facts or data; (c) the testimony is the product of reliable principles and methods; and (d) the expert has reliably applied the principles and methods to the facts of the case.” FRE 702. In relevant part, FRE 703 provides the bases of an expert’s opinion: “An expert may base an opinion on facts or data in the case that the expert has been made aware of or personally observed. If experts in the particular field would reasonably rely on those kinds of facts or data in forming an opinion on the subject, they need not be admissible for the opinion to be admitted.”

FRE 802 provides “[h]earsay is not admissible unless any of the following provides otherwise: [] a federal statute; [] these rules; or [] other rules prescribed by the Supreme Court.” FRE 801(c) defines hearsay as “a statement that: (1) the declarant does not make while testifying at the current trial or hearing; and (2) a party offers in evidence to prove the truth of the matter asserted in the statement.”

The proponent of disputed evidence bears the burden of proving the evidence’s admissibility by a preponderance of the evidence. *Bourjaily v. United States*, 483 U.S. 171, 175 (1987) (“We have traditionally required that [preliminary factual questions under FRE 104(a)] be established by a preponderance of proof.”); *Decker v. GE Healthcare Inc.*, 770 F.3d 378, 391 (6th Cir. 2014) (“[A] party proffering expert testimony must show by a ‘preponderance of proof’ that the expert whose testimony is being offered is qualified and will testify to scientific knowledge that will assist the trier of fact in understanding and disposing of relevant issues.”) (citation omitted); Tr. at 21:3–12 (parties agreeing this is the proper standard); *see* FRE 104(a).

IV. Whether Mr. Votypka’s Packaging Cost Estimate is Admissible

A. Whether Mr. Votypka’s Testimony is Based on Scientific, Technical, or Specialized Knowledge Within the Scope of FRE 702

The government asks the Court to exclude under Rule 701 Mr. Votypka’s sensor packaging cost estimates and his testimony on the matter because it is “inherently based upon scientific and technical knowledge of the kind covered by [FRE] 702.” Def.’s Mot. Exclude Votypka at 1. Although the sensor packaging is specialized, requiring particular materials and highly technical process steps, the government states plaintiff has not disclosed Mr. Votypka as an expert, disclosed any expert report or analysis related to his testimony pursuant to RCFC 26(a), and (according to the government) Mr. Votypka could not be qualified as an expert. *Id.* at

3–6. Mr. Votypka, the government alleges, is the only witness who prepared the packaging cost estimate. *Id.* at 6.

In three instances at oral argument, plaintiff admitted it never identified Mr. Votypka as an expert witness. Tr. at 27:19–24, 28:9–12, 48:17–24. Plaintiff explains it did not disclose Mr. Votypka as an expert witness because “[a]t the time that the initial witness disclosures were made [plaintiff was] not anticipating exactly how [it] would put the lost profits model together.” Tr. at 49:21–24. Plaintiff, therefore, submits Mr. Votypka’s packaging cost estimate as layperson testimony under FRE 701.¹ The issue before the Court, therefore, is whether Mr. Votypka’s packaging cost estimate is admissible layperson testimony under FRE 701.

Plaintiff bears the burden of proving the admissibility of Mr. Votypka’s packaging cost estimate by a preponderance of the evidence. *Bourjaily*, 483 U.S. at 175. Lay witness opinion is admissible if it is helpful to the trier of fact, based on the witness’s perception, and not based on scientific, technical, or other specialized knowledge. FRE 701.

After review of the document and discussion at argument, the Court makes certain observations about Mr. Votypka’s sensor packaging cost estimate. The cost estimate is a Microsoft Excel spreadsheet, appears on one printed page, and serves as a theoretical estimation of the cost to package the silicon carbide die sensor in a useful form for customers. *See* Def.’s Mot. Exclude Votypka App. at Appx78 (Spectre SiC Costing). The sensor packaging is the subject of one of two patents Spectre licensed, U.S. Pat. No. 6,845,664 (“’664 Patent”), and the packaging process must be carried out in a particular manner to produce suitably functional pressure sensors. Compl. at 21. The packaging cost estimate Mr. Votypka prepared comprises a table which lists various steps in the packaging process according to Mr. Votypka’s understanding of the theoretical process. *See* Def.’s Mot. Exclude Votypka App. at Appx78 (Spectre SiC Costing). For each step in the theoretical process, Mr. Votypka identifies material types, amounts, and costs; he also estimates labor, fixed overhead costs, and variable overhead costs associated with each theoretical process step. *Id.* Finally, Mr. Votypka totals these costs for each theoretical process step. *Id.*

Although plaintiff submits Mr. Votypka’s testimony under FRE 701, Mr. Votypka admitted during his deposition he does not have any experience packaging silicon carbide die. FRE 701(a); Def.’s Mot. Exclude Votypka App. at Appx34 (Votypka Dep. at 252:5–9) (“Q. . . . Do you have any experience with this kind of packaging? A. Directly, no. Q. You have some experience indirectly? A. Just what I researched and looked [at].”). Plaintiff’s counsel also confirmed at oral argument Mr. Votypka lacks such experience. Tr. at 29:19–25 (“[COURT]: But [Mr. Votypka is] testifying to something that he’s never done before. You agree with that

¹ Plaintiff acknowledges Mr. Votypka’s packaging cost estimate is not admissible under FRE 702 but argues the cost estimate is still admissible as fact witness testimony under FRE 701. Tr. at 27:1–10 (“[COURT]: So Plaintiff’s position then is that it does not require scientific and technical knowledge in order to calculate out the packaging cost estimate? [PLAINTIFF]: Well, it may. It depends on the circumstances. [COURT]: So not here then? [PLAINTIFF]: No. I don’t think it does here.”), 23:1–12 (“[COURT]: Where specifically do you address whether or not Mr. Votypka could be qualified as an expert witness or do you not disagree with that? [PLAINTIFF]: Well, . . . for employees of the company, I’m not sure that it matters so much. In the case law . . . lay people are allowed to give opinions that seem to go into the realm . . . of what just about anybody would consider to be . . . expert knowledge.”).

characterization? [PLAINTIFF]: I think that's correct. Although, he certainly has worked with a lot of these things before. This particular thing, no."), 48:25–49:5 ("COURT: But [Mr. Votypka has] never done [a packaging cost estimate for a silicon carbide pressure sensor] before? [PLAINTIFF]: He's done estimates before. He's never estimated this precise thing with this patent without any additional knowledge before. That's correct."). Plaintiff accordingly cannot show by a preponderance of proof Mr. Votypka "had an adequate opportunity to observe" packaging a silicon-carbide die or preparing a cost estimate to do so. *BPLW Architects & Eng'rs, Inc.*, 106 Fed. Cl. at 545 (citation omitted). Mr. Votypka's deposition responses demonstrate his cost analysis relies on his theoretical application of information he obtained by researching the subject, however, "[a] person who has no knowledge of a fact except what another has told him does not satisfy the requirement of knowledge from observation." *Id.* (cleaned up); Def.'s Mot. Exclude Votypka App. at Appx34 (Votypka Dep. at 252:5–9) (stating Votypka's only experience with this packaging is indirect through research). To the extent the estimate is based on Mr. Votypka's research, Def.'s Mot. Exclude Votypka App. at Appx34 (Votypka Dep. at 252:5–9), the estimate is based on a theoretical process Mr. Votypka never performed, thus his testimony is inadmissible layperson testimony under FRE 701(a) because it is not "rationally based on [his] perception." FRE 701(a); see *BPLW Architects & Eng'rs, Inc.*, 106 Fed. Cl. at 545.

To be admissible under FRE 701, layperson testimony also must not be "based on scientific, technical, or other specialized knowledge within the scope of Rule 702." FRE 701(c). Here, scientific, technical, or specialized knowledge is needed to select process techniques and materials. See Pl.'s Mot. Exclude Votypka Resp. & Cross-Mot. Exclude Knobloch App. at Appx6 ('664 Patent, claim 73), ECF No. 120-1. For example, Mr. Votypka's packaging cost estimate relies on his understanding of how to braze an aluminum nitride header with metal, a process that depends on a melted metal's adherence to a solid metal. Def.'s Mot. Exclude Votypka at Appx76–77 (Knobloch Report). Plaintiff agreed this process "require[s] technical understanding." Tr. at 38:15–24 ("[COURT]: Well, so let's look at the . . . claims of the ['664 Patent]. Would a lay person understand what equipment is necessary to coat an [a]luminum [n]itride header with a metallic material? [PLAINTIFF]: No. [COURT]: . . . So that would require technical understanding? [PLAINTIFF]: Yes."). The packaging also requires other steps typically associated with semiconductor chip manufacturing such as gold stud bumping (i.e., placing metal "bumps" on a semiconductor to facilitate electrical connections to pins) and seal glass bonding (i.e., heating and fusing glass frits to create a glass layer on a surface). Pl.'s Mot. Exclude Votypka Resp. & Cross-Mot. Exclude Knobloch App. at Appx5–6 ('664 Patent); Tr. at 37:20–38:10 ("[COURT]: So to understand the packaging [process] . . . would not require any technical background . . . ? [PLAINTIFF]: . . . [Y]ou would need to know that part of the packaging involves a process sort of like stud bumping with the gold pins, and so you would need to know about some things like that.").

In addition to understanding how to carry out the process, estimating the packaging cost requires an ability to select compatible materials and estimate material amounts. When asked how Mr. Votypka estimated "each component would require 0.063 pounds of [n]ickel powder to bra[ze] the ceramic header to the [k]ovar tube," plaintiff explained Mr. Votypka relied on his engineering experience to calculate it using the dimensions of the device. Tr. at 50:14–52:3 ("[COURT]: . . . [S]o . . . Mr. Votypka calculated it based on his engineering experience?

[PLAINTIFF]: Yeah.”). The importance of selecting suitable materials became apparent when the government’s expert Dr. Knobloch noted Mr. Votypka’s materials for the brazing step are not compatible. Def.’s Mot. Exclude Votypka App. at Appx76 (Knobloch Report). Mr. Votypka’s packaging cost estimate is accordingly inadmissible as lay testimony as it is “based on scientific, technical, or other specialized knowledge within the scope of Rule 702.” FRE 701(c).

Plaintiff argues Mr. Votypka was simply following the process described in the patent application when he prepared the packaging cost estimate. Tr. at 32:8–24 (“[Plaintiff]: . . . the patent says that you connect the header . . . to the stainless steel tube with a filler material, a metallic material, and that material is [n]ickel. And he relied on that. And if that’s wrong, it’s not our fault. It’s NASA’s fault.”). The issue before the Court, however, is whether Mr. Votypka’s packaging cost estimate is admissible layperson testimony, not whether the assumptions Mr. Votypka relied upon or the specifications provided in the ’664 Patent were correct. Plaintiff’s argument, moreover, fails to consider the patent description was written for a person of ordinary skill in the relevant art. 35 U.S.C. § 112(a) (2012); *Amgen Inc. v. Sanofi, Aventisub LLC*, 987 F.3d 1080, 1084 (Fed. Cir. 2021). Both parties agree the ’664 Patent was written for a target audience of skilled professionals. Tr. at 39:11–16 (“[COURT]: So your take is [the level of skill] would just be an undergraduate level degree in engineering? [PLAINTIFF]: Oh, yes. I don’t know that you would even—well, you probably would need that.”), 44:1–4 (“[GOVERNMENT]: . . . [The level of skill is] higher than what Spectre brought to it, . . . probably a Ph.D.”). Plaintiff insists Mr. Votypka is sufficiently skilled to understand and practice the invention described by the ’664 Patent, but this only underscores Mr. Votypka’s packaging cost estimate is opinion testimony provided by “a witness who is qualified as an expert by knowledge, skill, or education” under FRE 702. As Mr. Votypka’s packaging cost estimate is opinion testimony based on his technical expertise under FRE 702, it is not experiential testimony based on his perception, and is accordingly inadmissible under FRE 701(c). *United States v. Wilson*, 605 F.3d 985, 1025 (D.C. Cir. 2010) (“Unlike experts, lay witnesses must base their testimony on their experiential perception and not on scientific, technical, or other specialized knowledge within the scope of Rule 702. This requirement ensures that lay testimony is the product of reasoning processes familiar to the average person in everyday life.”) (cleaned up).

In its motion in limine, the government’s technical expert Dr. Knobloch explains the model Mr. Votypka relied upon cannot be “technically realized” because it involves brazing nickel powder to ceramic; and this is not possible without metallizing the ceramic first or using an active metal braze. Def.’s Mot. Exclude Votypka App. at Appx76–77 (Knobloch Report). Plaintiff did not refute Dr. Knobloch’s statement and admits Spectre lacked sufficient information to create a cost estimate based on a technologically sound packaging process. See Pl.’s Mot. Exclude Votypka Resp. & Cross-Mot. Exclude Knobloch at 7 (“The [g]overnment is barred as a matter of law from using Spectre’s lack of knowledge as a result of [the government’s failure to provide technical information about the packaging process] to avoid damages.”); Tr. at 32:18–24 (“[Mr. Votypka] relied on [the description in the ’664 Patent to select nickel as the brazing material]. And if that’s wrong, it’s not our fault. It’s NASA’s fault.”).

As trials in the Court of Federal Claims lack juries, “there is no concern for juror confusion or potential prejudice” and the Court has “greater discretion to deny a motion in limine.” *City of Wilmington v. United States*, 152 Fed. Cl. 373, 377 (2021) (cleaned up). The Court would ordinarily allow the parties to proceed with presenting their case and withhold judgment on the admissibility of evidence until after trial for this reason. In some instances, however, the Court may rule in advance on the admissibility of evidence to simplify issues for trial. RCFC 16(c)(2)(D); *Baskett v. United States*, 2 Cl. Ct. 356, 359 (1983) (“[T]his court . . . has the authority to issue pretrial rulings concerning the admissibility at trial of proposed testimony and documentary evidence [under RCFC 16].”) (citations omitted). In the Court’s view, this is particularly appropriate when the evidence lies well outside the bounds of admissibility as in this case where Mr. Votypka’s theoretical packaging cost estimate is not technically feasible.

Mr. Votypka’s theoretical packaging cost estimate is not “rationally based on [his] perception” because he is unfamiliar with the packaging process at issue. FRE 701(a); *see BPLW Architects & Eng’rs, Inc.*, 106 Fed. Cl. at 545. The packaging cost estimate is also problematic because it is “based on scientific, technical, or other specialized knowledge within the scope of Rule 702.” FRE 701(c). Even if plaintiff were to succeed in proving Mr. Votypka’s packaging cost estimate is rationally based on his perception, his estimate lacks probative value because it is modeled on a process that is technically unfeasible and unreliable. Def.’s Mot. Exclude Votypka App. at Appx76–77 (Knobloch Report).

Subject to the rules of evidence, Mr. Votypka would likely be able to testify at trial based on his perception of events or his experience working as an engineer for Spectre (e.g., the subject matter identified in plaintiff’s initial discovery disclosure), but the packaging cost estimate he prepared based on his theoretical understanding of the technology is inadmissible under FRE 701. FRE 701(a), (c); *see BPLW Architects & Eng’rs, Inc.*, 106 Fed. Cl. at 545. Accordingly, the Court grants the government’s motion to exclude Mr. Votypka’s packaging cost estimate. The Court will also exercise its discretion to allow plaintiff to prepare and serve the government with a revised packaging cost estimate based on admissible evidence in the record, if any, consistent with this order. *Univ. of W. Virginia Bd. of Trustees v. VanVoorhies*, 278 F.3d 1288, 1295–96 (Fed. Cir. 2002) (deferring to trial court’s judgment “on matters closely associated with the standard functions of the adjudicative process,” such as discovery matters, “as long as that judgment is not an abuse of the trial court’s discretion”); *Schism v. United States*, 316 F.3d 1259, 1300 (Fed. Cir. 2002) (“A trial court has wide discretion in setting the limits of discovery.”) (cleaned up); *see infra* Section VIII. Subject to the rules of evidence, Mr. Votypka may provide a revised packaging cost estimate based on information he obtained by his experience and perception while working for Spectre such as the subject matter disclosed in plaintiff’s initial discovery disclosure.²

² According to plaintiff’s initial discovery disclosure:

Jeff Votypka is an engineer who was Spectre’s Project Director throughout most of the project. He oversaw the work conducted by outside engineers and devoted a large amount of time to testing the faulty sensors provided by NASA and after NASA refused further technology transfer, to reverse engineer the sensor dies and headers. He is expected to testify to his interactions with Dr. Okojie; his attempts to obtain transfer of the technology sufficient to allow Spectre or its vendors to replicate

B. The Government’s Alleged Breach of its Contract with Spectre Does Not Excuse Plaintiff from Producing Reliable Evidence

Plaintiff argues it was prejudiced by the government’s alleged breach of its contractual obligation to provide Spectre with sufficient technical information to manufacture the packaging, and absent this information plaintiff is unable to provide a more accurate packaging cost estimate. Pl.’s Mot. Exclude Votypka Resp. & Cross-Mot. Exclude Knobloch at 6–7 (explaining Spectre believed “it would suffice for purposes of making a reasonable estimate of its lost profits” to use the elements of the relevant patent claim and assume the header could be attached to the kovar tube by brazing with nickel as a filler metal). Plaintiff attempted to obtain the necessary technical information from the government and from the government’s third-party contractor but was met with “fierce opposition.” *Id.* at 6 n.3. According to plaintiff, “[t]he holdings of this [c]ourt have long recognized, that ‘The defendant who has wrongfully broken a contract should not be permitted to reap advantage from his own wrong by insisting on proof which by reason of his breach is unobtainable.’” *Id.* at 7 (quoting *Locke v. United States*, 151 Ct. Cl. 262, 267 (1960)). Thus, the government “is barred as a matter of law from using Spectre’s lack of knowledge as a result of [its] breach to avoid damages.” *Id.*

The government replies “Spectre has simply made no attempt to obtain the evidence. Spectre never tasked its expert, Dr. Spangler, with calculating packaging costs.” Def.’s Mot. Exclude Votypka Reply at 3 (citations omitted). The government subcontracts the packaging process for its own sensor needs to a third party, Sienna Technologies, *id.* at 4, and since “NASA does not perform the packaging process itself, it does not have aggregate data regarding packaging costs to disclose.” *Id.* Spectre attempted to obtain the relevant data from Sienna Technologies but “decided it could not afford a Rule 37 battle” after being “met with fierce opposition.” *Id.* (quoting Pl.’s Mot. Exclude Votypka Resp. & Cross-Mot. Exclude Knobloch at 6 n.3). “Accordingly,” the government argues, “Spectre’s own litigation decisions . . . contributed to its failure to provide any admissible packaging cost estimate.”³ *Id.* at 4–5. The government also argues *Locke* is irrelevant because it did not involve admissibility issues. *Id.* at 5. According to the government, *Locke*’s holding “only applies when a plaintiff has met the high burden to show that the enterprise would actually have been profitable. . . . Thus, *Locke* addressed rules of a plaintiff’s burden of proof, and not rules of admissibility of evidence.” Def.’s Mot. Exclude Votypka Reply at 6 (citation omitted).

the NASA pressure modules; his attempts to discover the equipment and materials that would be needed to manufacture the technology; his testing of the broken and faulty sensors delivered by NASA; his attempts to cause Dr. Okojie to reconcile the test results; and Spectre’s efforts to mitigate the damages caused by NASA’s default by improving it[s] product line.

Pl.’s Initial Disc. Disclosure at 3 (emphasis omitted).

³ The government argues Spectre would not have enjoyed any profits from silicon carbide sensor sales because it was not technically competent to produce the silicon carbide sensors in the first place. Tr. at 120:18–121:18. The government also argues Spectre would not have been profitable because it underestimates the cost to produce and package the silicon carbide pressure sensors. Tr. at 121:19–122:10. For now, the Court declines to weigh these arguments as they relate more to the government’s motion for partial summary judgment than the motions the Court decides in this opinion.

Plaintiff admits this case is procedurally distinguishable from *Locke*. Tr. at 69:22–25 (“[COURT]: . . . So the issue of liability was already determined in [*Locke*] and that’s distinguishable from this case, right . . . ? [PLAINTIFF]: Yes, Your Honor.”). The government’s breach of contract was not an issue in *Locke*, rather the issue was whether plaintiff suffered compensable damage from the government’s breach. *Locke*, 151 Ct. Cl. at 264–66. The court held “[i]f a reasonable probability of damage can be clearly established, uncertainty as to the amount will not preclude recovery.” *Id.* at 267 (citation omitted). Plaintiff suggests *Locke* supports awarding damages based on a reasonable approximation for those damages, Tr. at 71:16–72:10, but plaintiff’s argument is premature because damages are not the issue before the Court—the issue is whether Mr. Votypka’s packaging cost estimate is admissible layperson testimony under FRE 701. Nothing in *Locke* suggests the standard for admissible evidence is lessened for a determination on damages. In fact, plaintiff agrees nothing in *Locke* addresses the admissibility of evidence. Tr. at 71:16–21 (“[COURT]: So where in *Locke* did the Court of Claims deal with the admissibility of evidence? [PLAINTIFF]: Well, I don’t think this is an admissibility of evidence—it’s not the admissibility of evidence.”). The Court therefore finds plaintiff’s arguments regarding *Locke* unpersuasive.

As the Court finds Mr. Votypka lacked experience with the packaging process or packaging cost estimate, plaintiff cannot prove Mr. Votypka’s cost estimate would be admissible under FRE 701, even if the government had disclosed such information. *See supra* Section IV.A. Plaintiff also has not shown it could not obtain the information it seeks through discovery.⁴ Even if the government failed to produce information about the packaging process, as plaintiff argues, it would not affect the Court’s conclusion Mr. Votypka lacks experience with the packaging process and his packaging cost estimate is based, not on his perception, but on scientific or technical knowledge or expertise. FRE 701(c), 702; *Wilson*, 605 F.3d at 1025. The Court will, however, allow plaintiff to provide a revised packaging cost estimate based on relevant information Mr. Votypka experienced and perceived, if any, while working for Spectre. *Florsheim Shoe Co., Div. of Interco, Inc. v. United States*, 744 F.2d 787, 797 (Fed. Cir. 1984) (“Questions of the scope and conduct of discovery are . . . committed to the discretion of the trial court.”) (citation omitted); *see infra* Section VIII.

V. Whether Testimony from Drs. Melkonian and Spangler Should be Excluded

Before providing an expert report or being made available for deposition, Spectre’s retained expert Dr. Melkonian withdrew from the case citing a conflict of interest. Joint Status Report at 2–3. Rather than retain a new expert to draft a revised expert report, Spectre retained Dr. Spangler to “review and, if appropriate, endorse [Dr. Melkonian’s analysis].” *Id.* at 3; Tr. at 157:11–25. The government argues this procedure “does not comport with the requirements of the Rules of the United States Court of Federal Claims nor the requirements of the Federal Rules of Evidence” and therefore requests the Court exclude both Dr. Melkonian’s expert materials and the portions of Dr. Spangler’s report which rely on them. Def.’s Mot. Exclude Spangler at 1. “Dr. Spangler’s analysis is,” the government says, “an *ipse dixit* report, based almost entirely on his experience and largely devoid of analysis or methodology.” *Id.* at 13 (citing *Gen. Elec. Co.*

⁴ Plaintiff sought technical details on the packaging process by issuing a subpoena to the government’s contractor Sienna Technologies, however, plaintiff relented after it was “met with fierce opposition and decided it could not afford a R[CFC] 37 battle.” Pl.’s Mot. Exclude Votypka Resp. & Cross-Mot. Exclude Knobloch at 6 n.3.

v. Joiner, 522 U.S. 136, 146 (1997)). The government concludes “[Dr. Spangler’s] unsupported endorsement of Dr. Melkonian’s cost calculation must be excluded.” *Id.* at 14.

Plaintiff bears the burden of supporting the admissibility of Dr. Spangler’s fabrication cost estimate with a preponderance of the evidence. *Bourjaily*, 483 U.S. at 175. An expert may base an opinion on facts of the type “experts in the particular field would reasonably rely on.” FRE 703. The Court, however, “must make sure that the expert isn’t being used as a vehicle for circumventing the rules of evidence.” *Matter of James Wilson Assocs.*, 965 F.2d 160, 172–73 (7th Cir. 1992) (citation omitted).

After reviewing the fabrication cost estimate Dr. Spangler prepared and the materials Dr. Melkonian prepared, the Court observes the two estimates are spreadsheets which appear to list the process and subprocess steps necessary to manufacture silicon carbide pressure sensors. Def.’s Mot. Exclude Spangler App. at Appx2–4 (Spangler Report). The two cost estimates are substantially similar, with minor modifications in Dr. Spangler’s cost estimate that increase the overall cost. *Compare id.* at Appx64–69 (Melkonian Estimate), *with id.* at Appx70–75 (Spangler Estimate). This assessment is supported by Dr. Spangler’s admission the two estimates are nearly the same. *Id.* at Appx61 (Spangler Dep. at 203:2–5) (“Q. This spreadsheet is essentially the costing spreadsheet that Chris Melkonian provided, at least according to me, right? A. Yes.”).

Plaintiff does not argue Dr. Melkonian’s fabrication cost estimate is admissible by itself and appears to concede the materials are inadmissible on their own. Tr. at 152:8–16 (“[COURT]: So do you argue now then that [Dr. Melkonian’s] materials are admissible on their own even in his absence? [PLAINTIFF]: I think they’re admissible through Dr. Spangler. [COURT]: But not on their own? [PLAINTIFF]: Well, I don’t know who would talk about them.”). Plaintiff also insists the Rules of Evidence concerning admissibility of expert testimony do not apply to Dr. Melkonian’s materials because he is no longer their expert. Tr. at 158:1–6 (“[COURT]: So aren’t the materials . . . barred under [RCFC 37(c)(1)] if there’s no expert report? [PLAINTIFF]: That doesn’t apply to Dr. Melkonian anymore because he is not our expert anymore. He’s not our expert.”), 187:18–21 (“[PLAINTIFF]: . . . Chris Melkonian is not our expert witness. These rules don’t apply to him.”). The Court, therefore, does not find it necessary to consider whether Dr. Melkonian’s materials are admissible on their own.

Whether Dr. Spangler’s fabrication cost estimate and portions of his expert report relying upon Dr. Melkonian’s calculations are admissible depends on whether the calculations are the type of information experts in the field would reasonably rely upon. FRE 703. Plaintiff, however, admits “Dr. Melkonian . . . used one materially wrong assumption” which the government brought “to Spectre’s attention”—notably, only “[a]fter Dr. Spangler concluded that Dr. Melkonian’s cost estimates and fabrication quotes to Spectre were reasonable.” Joint Status Report at 3. When the Court asked plaintiff why Dr. Spangler did not catch this errant assumption, plaintiff responded “[h]e made a mistake.” Tr. at 173:19–174:6. Although the parties note this mistake “is not fatal to Spectre’s case,” Joint Status Report at 3 n.2, this mistake does undermine the reasonableness of Dr. Spangler’s reliance on Dr. Melkonian’s report as with the correct assumption “the cost per wafer is substantially higher than assumed in Dr. Melkonian’s work product, which will result in higher manufacturing costs to Spectre, which

will result in decreased profits.” Joint Status Report at 3. Plaintiff also admitted Dr. Melkonian’s cost estimate includes references to an unknown etching service provider identified by the abbreviation “UM.” Tr. at 175:23–176:15 (“[COURT]: . . . [L]ooking at the cost estimate Dr. Melkonian prepared, . . . [it] lists UM processing fees, UM entry fees, UM staff fees. Where do these figures come from? [PLAINTIFF]: I don’t know. Dr. Melkonian provided them. . . . [COURT]: Does Dr. Spangler know? [PLAINTIFF]: I don’t know. He had to make assumptions as to what that meant.”). Dr. Spangler surmised in his deposition the “UM” abbreviation refers to the University of Michigan, Def.’s Mot. Exclude Spangler App. at Appx30 (Spangler Dep. at 80:21–81:2), but when the government’s expert Dr. Knobloch reached out to the University of Michigan to inquire about its facility, the University explained it is not capable of performing the deep etching the process would require. *Id.* at Appx95–96 (Michigan Email). The Court is not convinced an expert in the field would reasonably rely on a cost estimate containing a “materially wrong assumption” or figures of an unknown origin. *Wi-LAN Inc. v. Sharp Elecs. Corp.*, 992 F.3d 1366, 1375–76 (Fed. Cir. 2021) (finding while “experts typically rely on material, like source code,” “Wi-LAN has not made a showing that source code experts reasonably rely on *unauthenticated* source code printouts”) (emphasis added); Joint Status Report at 3.

Plaintiff argues this case is distinguishable from the cases the government cites prohibiting an expert from submitting another expert’s testimony because Dr. Spangler has firsthand knowledge or expertise in the subject matter of the submitted testimony and is qualified to make his own assessment. Pl.’s Mot. Exclude Spangler Resp. at 1. When asked why Dr. Melkonian’s estimations of machine hourly utilization costs were appropriate, Dr. Spangler stated “I’ll just say, in simple form, that’s my job, that’s my business, that’s what I do for a living.” Def.’s Mot. Exclude Spangler App. at Appx24 (Spangler Dep. at 54:13–18). When pressed, Dr. Spangler confirmed his opinion was based solely on his experience and provided no other basis. *Id.* (Spangler Dep. at 55:10–23) (“[M]y business is interacting with foundries and service providers all over the world. I’ve been doing this my entire career. So I didn’t need any other documents because this is what I do.”). Without independently analyzing Dr. Melkonian’s calculations, Dr. Spangler concluded they were appropriate by relying on his experience manufacturing semiconductor products. *Id.* at Appx21 (Spangler Dep. at 43:2–21); *see also id.* at Appx24 (Spangler Dep. at 57:15–19) (“Q: . . . Did you do anything else? Did you look at documents? Did you perform any analysis to check these rates other than that? A: Specifically for this report, no.”). Dr. Spangler responded similarly for other aspects of the cost calculation, confirming his analysis was based on his experience and not any other kind of documentary review or calculation. *Id.* at Appx29 (Spangler Dep. at 75:5–76:1) (discussing nonrecurring engineering costs); *id.* at Appx32 (Spangler Dep. at 87:9–15, 88:8–14) (discussing outside wafer services); Def.’s Mot. Exclude Spangler App. at Appx38 (Spangler Dep. at 113:17–23) (discussing tantalum silicide sputtering target cost estimate); *id.* at Appx39–40 (Spangler Dep. at 115:8–118:4) (discussing the suitability of silicon carbide die production costs for the relevant time frame); *id.* at Appx43–44 (Spangler Dep. at 133:5–135:13) (discussing Dr. Spangler’s opinion that Dr. Melkonian’s projected costs could be representative of costs at “any one of a number” of different fabrication facilities in the United States).

At oral argument, plaintiff confirmed Dr. Spangler did not independently verify the facts and figures included in Dr. Melkonian’s fabrication cost estimate. Tr. at 176:10–16 (“[COURT]:

Did [Dr.] Spangler verify the important facts and figures with original sources? [PLAINTIFF]: Well, I don't know. . . . I don't know that he felt the need to.”), 183:25–184:6 (“[PLAINTIFF]: . . . I mean other than saying that [Dr. Melkonian’s] numbers look right to [him], [Dr. Spangler] can’t explain why [Dr.] Melkonian used them, but he has endorsed the numbers, except for the ones that he changed and, in effect, that is now his cost estimate for this work.”). Dr. Spangler, therefore, based his opinion regarding the appropriateness of Dr. Melkonian’s cost estimate solely on Dr. Spangler’s experience in the field. Plaintiff, however, may not rely solely on Dr. Spangler’s credentials and experience to submit Dr. Melkonian’s cost estimate, some independent analysis or verification is also necessary. *In re ConAgra Foods, Inc.*, 302 F.R.D. 537, 556 (C.D. Cal. 2014) (excluding testimony where the expert “merely reviewed the surveys prepared by marketing experts and [wa]s reporting what they found” without independently evaluating the results); *see also TK-7 Corp. v. Est. of Barbouti*, 993 F.2d 722, 732 (10th Cir. 1993) (holding that an expert who adopted projections of another expert did not reasonably rely on those projections when “he knew little or nothing at all about” the other expert and the record lacked evidence of the expert’s independent efforts to corroborate the projections); *Muhsin v. Pac. Cycle, Inc.*, No. 2010-060, 2012 WL 2062396, at *4, *8 (D.V.I. June 8, 2012) (stating experts may not rely “upon opinions developed by another expert without independent verification or validation of the underlying expert’s work,” because FRE 703 “contemplates that a testifying expert can validate the facts, data and opinions he relied upon . . . and be subject to cross-examination on them”) (cleaned up). For these reasons, plaintiff cannot show by a preponderance of proof Dr. Spangler’s cost estimate and portions of his report reasonably rely upon Dr. Melkonian’s partial estimate. FRE 703; *Wi-LAN Inc.*, 992 F.3d at 1375–76. The Court, therefore, grants the government’s motion to exclude Dr. Melkonian’s materials and the portions of Dr. Spangler’s report and testimony relying on them. As with *supra* Section IV, the Court also exercises its discretion to allow plaintiff to submit, consistent with this order, a revised report and fabrication cost estimate relying solely on admissible evidence and information provided by Dr. Spangler. *Univ. of W. Virginia Bd. of Trustees*, 278 F.3d at 1295–96 (deferring to the trial court’s judgment on discovery and other discretionary matters); *Schism*, 316 F.3d at 1300 (“A trial court has wide discretion in setting the limits of discovery.”) (cleaned up); *Kelly v. Syria Shell Petroleum Dev. B.V.*, 213 F.3d 841, 855 (5th Cir. 2000) (“A district court has broad discretion in all discovery matters, and such discretion will not be disturbed ordinarily unless there are unusual circumstances showing a clear abuse.”) (cleaned up); *see infra* Section VIII.

VI. Whether Portions of Mr. Keller’s and Mr. Carollo’s Sales Projections are Inadmissible Layperson Testimony Under FRE 701

The government challenges the admissibility of sales projections Mr. Keller and Mr. Carollo prepared on plaintiff’s behalf for litigation. The government argues such sales projections can only be offered by qualified experts, and Spectre’s employees have not been—and could not be—offered as expert witnesses. Def.’s Mot. Exclude Keller & Carollo at 7. Mr. Keller’s and Mr. Carollo’s testimony, the government argues, “goes beyond that which is permissible under [FRE] 701(a), which limits lay opinion testimony to that which is within the firsthand knowledge of the witness.” *Id.* The government also argues the testimony is inadmissible under FRE 701(c), which prohibits opinion testimony from lay witnesses based on scientific, technical, or specialized knowledge within the scope of FRE 702. *Id.* Sales

projections “are not a fact witness’s account of something that was actually perceived but rather an opinion as to what the witness believes is likely to occur in the future,” according to the government. *Id.* at 8. “As such, future sales projections are not ‘rationally based on the witness’s perception,’ as required for lay opinion testimony under [FRE] 701(a).” *Id.* at 8–9. The government also argues Mr. Keller’s and Mr. Carollo’s sales projections should be excluded because they rely on inadmissible hearsay. *Id.* at 16.

Plaintiff argues Mr. Keller’s and Mr. Carollo’s sales projections are admissible layperson testimony under FRE 701. Tr at 94:10–25. Plaintiff alleges it was “wounded” by the government’s alleged breach and could not afford “expensive experts.” Pl.’s Mot. Exclude Keller & Carollo Resp. at 2. Plaintiff believes its employees’ testimony should be allowed because they “have spent their lives in the pressure sensor market, determining the needs of a huge variety of customers, negotiating price points, making sales, losing sales, trying and trying again.” *Id.* at 4. For support, plaintiff argues the court in *American Savings Bank, F.A. v. United States* credited the bank’s officers’ lost profits testimony over the government’s expert’s testimony. *Id.* at 4–5.

Plaintiff bears the burden of proving Mr. Keller’s and Mr. Carollo’s sales projections are admissible by a preponderance of the evidence. *Bourjaily*, 483 U.S. at 175. A lay witness’s opinion is admissible if helpful to the trier of fact, based on the witness’s perception, and is not based on scientific, technical, or other specialized knowledge. FRE 701. A nonexpert with particularized knowledge of a business’s past performance may testify about the business’s lost profits without qualifying as an expert. *Lightning Lube, Inc. v. Witco Corp.*, 4 F.3d 1153, 1175 (3d Cir. 1993). Such particularized knowledge, however, must be based in the business’s past performance. *See, e.g., Versai Mgmt. Corp. v. Clarendon Am. Ins. Co.*, 597 F.3d 729, 737 (5th Cir. 2010); *Mississippi Chem. Corp. v. Dresser-Rand Co.*, 287 F.3d 359, 373 (5th Cir. 2002); *Securitron Magnalock Corp. v. Schnabolk*, 65 F.3d 256, 265 (2d Cir. 1995); *Lightning Lube, Inc.*, 4 F.3d at 1174–75. Expert testimony, by contrast, is required to support profit projections not grounded in a company’s past performance. *See Von der Ruhr v. Immtech Int’l, Inc.*, 570 F.3d 858, 863–66 (7th Cir. 2009) (finding no error in district court’s exclusion of company president’s lost profits testimony and in that court’s preclusion of plaintiff’s lost profits theory because testimony merely stated an expectation of future profits without supporting data or analysis); *US Salt, Inc. v. Broken Arrow, Inc.*, 563 F.3d 687, 690 (8th Cir. 2009) (finding no error in district court’s exclusion of company president’s lost profits testimony which was based only on the company’s own sales projections).

The Court’s limits its review to the particular portions of the lost profits model the government’s motion challenges, namely Spectre’s Mr. Keller’s and Mr. Carollo’s sales projections and testimony about the same. Def.’s Mot. Exclude Keller & Carollo at 20 (requesting the Court exclude Spectre’s sales projections and its lay employee witnesses’ testimony on the subject). The Court reviewed plaintiff’s description of its lost profits model and a summary of Mr. Keller’s and Mr. Carollo’s sales projections and projected profits. *See* Def.’s Mot. Exclude Keller & Carollo; Def.’s Mot. Exclude Keller & Carollo App. at Appx1–11 (Pl.’s Second Interrogs. Answers). The model relies in part on sales projections prepared by Mr. Keller and Mr. Carollo. Def.’s Mot. Exclude Keller & Carollo App. at Appx7 (Pl.’s Second Interrogs. Answers). The sales projections provide high and low estimates of sales over a five-

year period based on what plaintiff calls “representative sales,” which are hypothetical sales plaintiff believes would have been typical for a given customer. *Id.* at Appx8 (Pl.’s Second Interrogs. Answers). Plaintiff describes its “representative sales” as “cover[ing] a number of different types of customers and applications.” *Id.* If a particular representative customer would not have purchased the silicon carbide sensors, plaintiff explains, the sensors would have been sold to some other customer. *Id.* Plaintiff’s lost profits model thus assumes “sales would have been limited entirely by productive capacity, not by demand.” *Id.* at Appx3 (Pl.’s Second Interrogs. Answers). At least part of the lost profits model includes financial data that is not speculative, for example, the model includes a sheet titled “FINANCIALS” which contains Spectre’s actual operating figures for fiscal years 2011–2018. *Id.* at Appx4–5 (Pl.’s Second Interrogs. Answers). The Court’s review does not extend to this information, nor does it extend to portions of the lost profits model the government has not challenged.

First, the Court considers whether Mr. Keller’s and Mr. Carollo’s sales projections are rationally based on their perception and firsthand experience. As Spectre has only sold its legacy technology, plaintiff admitted Mr. Keller and Mr. Carollo’s experience is also limited to selling the legacy technology—they have no experience selling silicon carbide sensors. Tr. at 99:11–21, 102:25–103:6, 126:15–21, 130:8–9. Despite lacking experience selling silicon carbide sensors, plaintiff’s projected sales of these sensors are substantially greater than sales of its legacy technology. Tr. at 143:21–144:6. Although plaintiff asserts it would experience limitless future demand, Spectre has never performed so successfully in its past. Tr. at 128:11–19. Plaintiff’s theoretical sales projections, therefore, are not based on or even congruent with its historical sales. To the extent Mr. Keller’s and Mr. Carollo’s opinions regarding future sales depart from Spectre’s past performance, their projections cannot be rationally based on their perception. FRE 701 (a); *see Von der Ruhr*, 570 F.3d at 863–66. Plaintiff tries to overcome this by citing *American Savings Bank*, a case in which a bank sued the government alleging a breach of contract resulting from the enactment of certain legislation. Pl.’s Mot. Exclude Keller & Carollo Resp. at 2–3. According to plaintiff, the judge in that case credited the bank’s officers’ testimony to establish lost profits over the government’s expert’s testimony. *Id.* The court in *American Savings Bank*, however, found the witness’s testimony was based on “his actual experience with the data. His factual testimony was grounded in the [past performance] data he actually worked with and not in any theoretical expertise.” *Am. Sav. Bank, F.A. v. United States*, 98 Fed. Cl. 291, 308 (2011); Tr. at 139:15–140:2. Unlike *American Savings Bank*, plaintiff’s sales projections are theoretical and disconnected from its past performance, therefore, *American Savings Bank* does not support the admissibility of Mr. Keller’s and Mr. Carollo’s sales projections. *See Am. Sav. Bank*, 98 Fed. Cl. at 308.

Second, the Court considers whether plaintiff’s sales projections are “based on scientific, technical, or other specialized knowledge within the scope of Rule 702.” FRE 701(c). Plaintiff admitted it did not brief whether Mr. Keller’s sales projections are based on scientific, technical, or specialized knowledge but plaintiff responded to this argument at oral argument. Tr. at 133:4–135:10. When asked at his deposition why a customer would choose a silicon carbide pressure sensor over other high-temperature sensing options, Mr. Keller explained in technical detail why the silicon carbide pressure sensor technology is superior to conventional sensing technology. Def.’s Mot. Exclude Keller & Carollo App. at Appx42–43 (Keller Dep. at 116:20–121:23) (explaining Rolls Royce would be motivated to purchase silicon carbide sensors due to

improved chemical and heat tolerance, size limitations, and ease of installation). Mr. Keller also explained Spectre’s customers could theoretically adapt the silicon carbide pressure sensor to their current applications. For example, Mr. Keller stated silicon carbide pressure sensors would be attractive to a customer like Rolls Royce for sensing fluid levels under extreme chemical conditions because, unlike conventional pressure sensors which are typically mounted away from chemicals at the top of a tank, a silicon carbide pressure sensor is more resilient and could be exposed to the chemicals in a more convenient location at the bottom of the tank. *Id.* at Appx43 (Keller Dep. at 118:4–121:23). Unlike business past performance, such theoretical reasoning is not the type of particularized knowledge that is admissible under FRE 701. *Mississippi Chem. Corp.*, 287 F.3d at 373 (citation omitted) (“[T]he witness must have personalized knowledge of the facts underlying the opinion and the opinion must have a rational connection to those facts.”). As Mr. Keller relies on his understanding of the customer’s technology and its limitations, his opinion is “based on scientific, technical, or other specialized knowledge within the scope of Rule 702” and accordingly inadmissible under FRE 701(c).

Third, while the Court has not reviewed the complete sales projections, Mr. Keller’s and Mr. Carollo’s depositions show the sales projections are at least partly based on third party statements made outside a court proceeding. The Court reviews the admissibility of these statements under FRE 802, i.e., the rule against hearsay. Hearsay is “a statement that: (1) the declarant does not make while testifying at the current trial or hearing; and (2) a party offers in evidence to prove the truth of the matter asserted in the statement.” FRE 801(c). Mr. Keller admitted his opinion a particular customer would purchase the silicon carbide sensors was solely based on his conversations with customers—conversations which took place outside a court proceeding. Def.’s Mot. Exclude Keller & Carollo App. at Appx29 (Keller Dep. at 63:5–64:10) (“Q. . . . How do you know that IM Flux would purchase silicon carbide sensors? A. The end customer told us in the meeting Q. Okay. Other than that conversation in a meeting, is your understanding that they would purchase silicon carbide sensors based on anything else? A. No.”). Plaintiff admitted this is hearsay, Tr. at 105:17–22, but for the first time at oral argument plaintiff argued it is admissible hearsay because plaintiff does not rely on it for the truth of the matter asserted.⁵ Tr. at 106:25–107:13 (“We’re not trying to establish that IMFLUX definitely would have purchased these sensors. So we’re not actually admitting this for the truth of the matter asserted We’ve tried to prove they might buy them, and if they didn’t buy them, somebody else [would].”).

To establish lost profits, plaintiff relies on conversations with customers to argue a representative customer would buy silicon carbide sensors—such is the truth for which plaintiff offers these statements. It is not clear how a statement which would be inadmissible hearsay if offered to prove a particular customer would buy pressure sensors is admissible to prove some undetermined customer would. If the customer’s statements were demonstrably false, the probative value of Mr. Keller’s and Mr. Carollo’s sales projections would be diminished. If, on the other hand, the customer’s statements were demonstrably true, the probative value of the sales projections would be bolstered. The statement’s probative value therefore depends on the declarants’ credibility. § 6718 Offered for the “Truth of the Matter Asserted” (Rule 801(c)(2)), 30B Fed. Prac. & Proc. Evid. § 6718 (2022 ed.) (“When a statement is offered to prove the truth

⁵ An out-of-court statement not submitted for the truth of the matter asserted is *not hearsay*. FRE 801(c). It is accordingly incorrect to say a statement is admissible hearsay when it is not asserted for the truth of the matter.

of the matter asserted by the out-of-court declarant, the declarant's credibility is crucial."). Thus, the statement is submitted for the truth of the matter asserted and is inadmissible hearsay. FRE 801(c), 802. Plaintiff's sales projections also rely on other instances of hearsay. Def.'s Mot. Exclude Keller & Carollo App. at Appx34–35 (Keller Dep. at 85:2–87:3) (confirming Mr. Keller based his projection regarding DM-Sensors on conversations with the company), Appx37 (Keller Dep. at 94:1–15) (stating Mr. Keller based his sales projection regarding SWRI on discussions and emails with the company), Appx41 (Keller Dep. at 113:14–21) (stating Mr. Keller's sales projections regarding FW Murphy are based on meetings with a local representative for the company), Appx95–96 (Carollo Dep. at 38:19–39:19) (stating Mr. Carollo based his sales projections regarding Flexpipe on a conversation with an employee of the company).

In sum, portions of Mr. Keller's and Mr. Carollo's testimony predicting future sales of silicon carbide sensors with no connection to their historical sales are not rationally based on their perception and are inadmissible under FRE 701(a). *See Von der Ruhr*, 570 F.3d at 863–66. Sales projections relying on Mr. Keller's or Mr. Carollo's assumptions regarding theoretically suitable applications are not based on personalized knowledge, and are likely based on technical, scientific, or specialized knowledge within the scope of FRE 702, and therefore inadmissible under FRE 701(c). *See Mississippi Chem. Corp.*, 287 F.3d at 373. Sales projections relying on out-of-court statements by nonlitigants regarding potential purchases of silicon carbide sensors are based on hearsay and are inadmissible under FRE 802. *See* FRE 801(c).

While portions of plaintiff's lost profits model may be inadmissible, the Court will not exclude the lost profits model without reviewing it in its entirety. Federal trial courts conducting bench trials have substantial flexibility to admit evidence and filter out information that is later excluded. *City of Wilmington*, 152 Fed. Cl. at 377; *United States v. Brown*, 415 F.3d 1257, 1269 (11th Cir. 2005) ("There is less need for the gatekeeper to keep the gate when the gatekeeper is keeping the gate only for himself."); § 2411 Practice Under Original Rule 43—Evidence in Nonjury Cases, 9A Fed. Prac. & Proc. Civ. § 2411 (3d ed.) ("[I]n a nonjury case the court should be slow to exclude evidence challenged under one of the exclusionary rules."). Accordingly, the Court withholds a final determination regarding the admissibility of plaintiff's lost profits model in its entirety, but grants in part and denies in part the governments motion to exclude Spectre's sales projections. The following are excluded: portions of Mr. Keller's and Mr. Carollo's sales projections and testimony based on communications with plaintiff's customers, sales projections based on scientific, technical, or specialized knowledge, and sales projections based on theoretical sales. As with *supra* Sections IV and V, the Court will also allow plaintiff to prepare and serve the government with revised sales projections based on admissible evidence in the record, if any, consistent with this order.⁶ *Univ. of W. Virginia Bd. of Trustees*, 278 F.3d at 1295–96 (deferring to trial court's judgment "on matters closely associated with the standard

⁶ According to plaintiff, NASA joined Spectre in submitting a business proposal in connection with its application for a grant from the State of Ohio that forecasted sales increasing to \$25 million in the first five years. Tr. at 107:25–108:4; *see* Compl. Ex. 3 at 23–84 (Ohio Grant). The government acknowledges reviewing the business proposal but refers to a letter it argues disclaims any endorsement of the business conclusions in the proposal. Tr. at 111:10–25; *see* Compl. Ex. 4 at 5–6 (14 Mar. 2011 Letter), ECF No. 1-4. The business proposal is not relevant to the admissibility of Mr. Keller's and Mr. Carollo's sales projections but could potentially be a useful reference if plaintiff succeeds on the merits of its case and the Court is tasked with calculating lost profits. The Court does not make any findings at this time regarding NASA's endorsement of the business proposal or the proposal's relevance in determining lost profits.

functions of the adjudicative process,” such as discovery matters, “as long as that judgment is not an abuse of the trial court’s discretion”); *Schism v. United States*, 316 F.3d 1259, 1300 (Fed. Cir. 2002) (“A trial court has wide discretion in setting the limits of discovery.”) (cleaned up); *Kelly*, 213 F.3d at 855 (“A [trial] court has broad discretion in all discovery matters, and such discretion will not be disturbed ordinarily unless there are unusual circumstances showing a clear abuse.”) (cleaned up); *see infra* Section VIII.

VII. Whether Dr. Knobloch’s Expert Testimony Concerning Mr. Votypka’s Cost Estimate is Admissible

Plaintiff moves the Court to exclude a portion of the government’s expert Dr. Knobloch’s testimony because, in plaintiff’s view, “it does not ‘help the trier of fact to understand the evidence or to determine a fact in issue’ as required by [FRE] 702(a).” Pl.’s Mot. Exclude Votypka Resp. & Cross-Mot. Exclude Knobloch at 2. Specifically, plaintiff objects to Dr. Knobloch’s testimony explaining plaintiff’s packaging cost estimate is not technically feasible because it assumes aluminum nitride headers can be brazed to the supporting metal using nickel as a fill material. *Id.* Plaintiff argues “Dr. Knobloch supposedly knows [how] to achieve the braze. He supposedly knows [the] cost. But he will not tell us because that would establish an element of Spectre’s case. That is not helping the trier of fact to determine an issue, it is merely helping the [g]overnment to defeat Spectre.” *Id.*

In response, the government argues “[p]arties are not required to provide evidence for their opponent’s claims. Rather, a party bears the burden of proof for its own claims.” Def.’s Mot. Exclude Votypka Reply at 7. In the government’s view, the Federal Rules of Evidence do not require a party to replace testimony it seeks to exclude with admissible testimony covering the same subject matter, and plaintiff does not cite case law for its “idiosyncratic interpretation” of FRE 702(a). *Id.* at 7–8. The government points out “a party seeking summary judgment may demonstrate that the non-moving party lacks evidence for essential elements of its claims, for which it bears the burden of proof.” *Id.* at 7 (citing *Celotex Corp. v. Catrett*, 477 U.S. 317, 322–23 (1986)). The reliability of Mr. Votypka’s packaging cost estimate, according to the government, “is a ‘fact in issue’ in these proceedings, as well as any further summary judgment or trial proceedings,” *id.* at 8 (quoting FRE 702(a)), and “Dr. Knobloch’s unrebutted expert testimony certainly helps the trier of fact understand the evidence in determining that issue,” *id.* The government also notes Mr. Votypka’s technical acumen and capability as Spectre’s project manager will be a fact issue in future proceedings, and Dr. Knobloch’s testimony is relevant to the Court’s determination on those matters. *Id.*

FRE 702(a) requires an expert witness’s testimony to “help the trier of fact to understand the evidence or to determine a fact in issue.” The government bears the burden of proving the admissibility of Dr. Knobloch’s testimony by a preponderance of the evidence. *Bourjaily*, 483 U.S. at 175. The government explains Dr. Knobloch’s testimony is helpful to determine whether Mr. Votypka’s silicon carbide sensor packaging cost estimate is a qualified, reliable, and fact-based estimate. Def.’s Mot. Exclude Votypka Reply at 8. The government also explains Dr. Knobloch’s testimony will assist the Court, if the case proceeds to trial, to assess Mr. Votypka’s technical acumen and capability as Spectre’s project director and the likelihood of Spectre’s success in commercializing the silicon carbide sensors. *Id.* The Court agrees with the

government and finds Dr. Knobloch's testimony is helpful for understanding and disposing of relevant issues in this case. FRE 702(a); *Decker*, 770 F.3d at 391.

Plaintiff's argument Dr. Knobloch's testimony is not helpful assumes the testimony must help the Court determine the cost of packaging silicon carbide sensors. Pl.'s Mot. Exclude Votypka Resp. & Cross-Mot. Exclude Knobloch at 2 ("Dr. Knobloch supposedly knows [how] to achieve the braze. He supposedly knows [the] cost. But he will not tell us because that would establish an element of Spectre's case. That is not helping the trier of fact to determine an issue, it is merely helping the [g]overnment to defeat Spectre."). This is not the only relevant issue in the case, rather the Court must also determine Mr. Votypka's qualifications and the reliability of his packaging cost estimate. In fact, Dr. Knobloch's testimony was helpful in the instant order to determine the reliability of Mr. Votypka's packaging cost estimate. *See supra* Section IV.A. Plaintiff does not cite any case law suggesting a narrower interpretation of FRE 702(a). As Dr. Knobloch's testimony "assist[s] the trier of fact in understanding and disposing of relevant issues," the Court is not persuaded the testimony is inadmissible under FRE 702(a) and accordingly denies plaintiff's motion to exclude portions of Dr. Knobloch's testimony. *Decker*, 770 F.3d at 391.

VIII. Conclusion

For the foregoing reasons, the Court **GRANTS** the government's motion in limine to exclude Mr. Votypka's packaging cost estimate, ECF No. 112. Plaintiff may prepare and serve the government with a revised packaging cost estimate based on admissible evidence in the record, if any, consistent with this order. The Court **GRANTS** the government's motion in limine to exclude materials prepared by Dr. Melkonian and portions of Dr. Spangler's report and testimony relying on Dr. Melkonian's materials, ECF No. 113. Consistent with this order, plaintiff may prepare and submit a revised report and fabrication cost estimate relying solely on admissible evidence and information provided by Dr. Spangler. The Court **GRANTS in part and DENIES in part** the government's motion in limine to exclude portions of Mr. Keller's and Mr. Carollo's testimony, ECF No. 114. Specifically, the Court excludes portions of Mr. Keller's and Mr. Carollo's sales projections and testimony based on communications with Spectre's customers, sales projections based on scientific, technical, or specialized knowledge, and sales projections based on theoretical sales. Plaintiff may prepare and serve the government with revised sales projections based on admissible evidence in the record, if any, consistent with this order. The Court **DENIES** plaintiff's motion in limine to exclude portions of Dr. Knobloch's testimony, ECF No. 120. The parties **SHALL FILE** a joint status report ("JSR") on or before **25 August 2022** proposing a schedule, if applicable, for plaintiff to serve the government with its revised packaging cost estimate, revised expert report and fabrication cost estimate, and revised sales projections and for the government to review and file any objections. The JSR shall include a proposed schedule for further proceedings related to the government's motion for partial summary judgment. The parties shall also confer and state their positions in the JSR concerning any potential to resolve this case by settlement conference or alternative dispute resolution.

IT IS SO ORDERED.

s/ Ryan T. Holte
RYAN T. HOLTE
Judge